

THAT WHICH IS CLAIMED:

1. A system comprising:

an environmental sensor associated with a product in a container;

at least one scanner for scanning the sensor at one or more locations to read product environment data from the sensor; and

a computer connected to communicate with the at least one scanner, the computer generating a transporting instruction for transporting the container and product based on the scanned product environment data.

2. A system as claimed in claim 1, wherein the transporting instruction is generated based on determining whether the environmental condition of the contained product has transcended a limit based on the product environment data.

3. A system as claimed in claim 1, wherein the sensor stores shipping address data of a receiver to which the container and product are to be sent, the transporting performed by a carrier so as to transport the container and product to the receiver based on the shipping address data so long as the determining has not established that the environmental condition has transcended the limit, and the transporting performed differently to other than the receiver if the environmental condition has transcended the limit.

4. A system as claimed in claim 1, wherein the at least one scanner is further used for scanning identification data from at least one of the container and product.

5. A system as claimed in claim 1, wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environment condition.

6. A system as claimed in claim 1, wherein the sensor comprises a visual indicator operable to signify that the environmental condition of the contained product has transcended a limit.

7. A system as claimed in claim 6, wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the environment condition to which the product is subjected transcending a limit.
8. A system as claimed in claim 1, wherein the sensor comprises a radio-frequency identification (RFID) sensor tag, and the scanner transmits and receives radio frequency signals from the tag in the performance of scanning the sensor.
9. A system as claimed in claim 1, wherein the sensor is placed inside the container.
10. A system as claimed in claim 1, wherein the sensor is affixed to an outer surface of the container.
11. A system as claimed in claim 1, wherein the sensor is positioned on the product inside of the container.
12. A system as claimed in claim 1, wherein the environmental condition sensed by the sensor to generate the product environment data includes at least one of temperature, pressure, vacuum, vibration, shock, humidity, moisture, light, air, and a chemical.
13. A system as claimed in claim 1, wherein the sensor comprises a temperature sensor, and the product environment data generated by the sensor comprises at least one measurement of a temperature level to which the product has been exposed.
14. A system as claimed in claim 1, wherein the sensor comprises a pressure sensor, and the product environment data generated by the pressure sensor comprises at least one measurement of a pressure level to which the product has been exposed.
15. A system as claimed in claim 1, wherein the sensor comprises a vacuum sensor, and the product environment data generated by the vacuum sensor comprises at least one measurement of a vacuum level to which the product has been exposed.

16. A system as claimed in claim 1, wherein the sensor comprises a light sensor, and the product environment data generated by the light sensor comprises at least one measurement of an amount of light to which the product has been exposed.
17. A system as claimed in claim 1, wherein the sensor comprises a chemical sensor, and the product environment data generated by the chemical sensor comprises at least one measurement of an amount of a chemical to which the product has been exposed.
18. A system as claimed in claim 1, wherein the sensor comprises an air sensor, and the product environment data generated by the air sensor comprises at least one measurement of an amount of air to which the product has been exposed.
19. A system as claimed in claim 1, wherein the sensor comprises a vibration sensor, and the product environment data generated by the vibration sensor comprises at least one measurement of an amount of vibration to which the product has been exposed.
20. A system as claimed in claim 1, wherein the sensor comprises a shock sensor, and the product environment data generated by the shock sensor comprises at least one measurement of an amount of shock to which the product has been exposed.
21. A system as claimed in claim 1, wherein the sensor comprises a humidity sensor, and the product environment data generated by the humidity sensor comprises at least one measurement of an amount of humidity to which the product has been exposed.
22. A system as claimed in claim 1, wherein the sensor comprises a moisture sensor, and the product environment data generated by the moisture sensor comprises at least one measurement of an amount of moisture to which the product has been exposed.

23. A computer system comprising:
- a server capable of communicating with a plurality of remote computers via a network, said remote computers operable to transmit at least one of product environment data, tracking data and identification data associated with at least one of a container and product, to the server via the network; and
- a database accessible by the server for storing product environment and tracking data in association with identification data.
24. The computer system as claimed in claim 23, wherein the tracking data comprises time and location data identifying when and where at least one scanning operation of a contained product took place.
25. The computer system as claimed in claim 23, wherein the identification data comprises a tracking identifier uniquely identifying at least one of the container and product.
26. An apparatus comprising:
- a database storage unit storing
- identification data associated with at least one of a container and product;
- tracking data associated with the identification data; and
- product environment data associated with the identification data and the tracking data.
27. The apparatus as claimed in claim 26, wherein the tracking data comprises time and location data identifying when and where, respectively, at least one corresponding scanning of the contained product took place.
28. The apparatus as claimed in claim 26, wherein the identification data comprises a tracking identifier uniquely identifying at least one of the container and product.

29. A method comprising:

scanning an environmental sensor physically associated with a product in a container at one or more locations to read product environment data from the sensor; and
transporting the container and product based on the product environment data.

30. A method as claimed in claim 29, further comprising:

determining whether the environmental condition of the contained product has transcended a limit based on the product environment data,
the transporting step being performed based on the determining step.

31. A method as claimed in claim 30, wherein the container has a shipping label having shipping address data indicating a shipping address of a receiver to which the container and product are to be sent, the transporting performed so as to transport the container and product to the receiver based on the shipping address data so long as the determining has not established that the environmental condition has transcended the limit, and the transporting performed differently if the environmental condition has transcended the limit.

32. A method as claimed in claim 30, wherein the sensor stores shipping address data of a receiver to which the container and product are to be sent, the transporting performed so as to transport the container and product to the receiver based on the shipping address data so long as the determining has not established that the environmental condition has transcended the limit, and the transporting performed differently if the environmental condition has transcended the limit.

33. A method as claimed in claim 30, wherein the container and product are routed to an alternate destination if the determining establishes that the environmental condition has transcended the limit.

34. A method as claimed in claim 33, wherein the alternate destination includes a disposal site.

35. A method as claimed in claim 33, wherein the alternate destination includes a different receiver than the receiver to whom the container and product were originally to be sent.

36. A method as claimed in claim 30, further comprising:

transmitting the product environment data via a network from a scanner performing the scanning, to a computer system for storage therein.

37. A method as claimed in claim 36, further comprising the steps of:

scanning identification data from at least one of the container and product;

transmitting the identification data to the computer system;

receiving identification data and product environment data from the scanner at the computer system via the network; and

storing the product environment data in association with the identification data at the computer system.

38. A method as claimed in claim 36, wherein the determining is performed by the computer system based on the received product environment data.

39. A method as claimed in claim 38, further comprising the step of:

generating a transporting instruction at the computer system for performance of the transporting based on the product environment data.

40. A method as claimed in claim 39, further comprising the step of:

transmitting the transporting instruction from the computer system to at least one point within a carrier's logistics network for performance of the transporting step.

41. A method as claimed in claim 36, further comprising the steps of:

generating tracking data including at least one of the time and location of the product during the performance of the scanning;

transmitting the tracking data to the computer system;

receiving tracking data at the computer system; and

recording the tracking data in association with the identification data and product environment data.

42. A method as claimed in claim 36, further comprising:

receiving at the computer system via the network a request from a user of a computing device to access product environment data for a package, the request including identification data associated with at least one of the container and product;

retrieving the product environment data based on the identification data; and

transmitting the product environment data from the computer system to the computing device via the network.

43. A method as claimed in claim 30, wherein the determining is performed by the sensor to produce determination data scanned in the scanning step.

44. A method as claimed in claim 30, wherein the sensor generates time data and stores product environment data in association with the time data to indicate the time of sensing the environmental condition.

45. A method as claimed in claim 30, wherein the sensor comprises a visual indicator operable to signify that the environmental condition of the contained product has transcended a limit.

46. A method as claimed in claim 45, wherein the visual indicator comprises at least one light-emitting diode (LED) that illuminates in response to the environment condition to which the product is subjected transcending the limit.

47. A method as claimed in claim 29, wherein the container is a package.

48. A method as claimed in claim 29, wherein the container is a shipping container.

49. A method as claimed in claim 29, wherein the sensor comprises a radio-frequency identification (RFID) sensor tag, and the scanner transmits and receives radio frequency signals from the tag in the performance of the scanning step.

50. A method as claimed in claim 49, wherein the sensor is placed inside the container.

51. A method as claimed in claim 49, wherein the sensor is affixed to an outer surface of the container.

52. A method as claimed in claim 49, wherein the sensor is positioned on the product inside of the container.

53. A method as claimed in claim 29, wherein the environmental condition sensed by the sensor to generate the product environment data includes at least one of temperature, pressure, vacuum, vibration, shock, humidity, moisture, light, air, and a chemical.

54. A method as claimed in claim 29, wherein the sensor comprises a temperature sensor, and the product environment data generated by the temperature sensor comprises at least one measurement of a temperature level to which the product has been exposed.

55. A method as claimed in claim 29, wherein the sensor comprises a pressure sensor, and the product environment data generated by the pressure sensor comprises at least one measurement of a pressure level to which the product has been exposed.

56. A method as claimed in claim 29, wherein the sensor comprises a vacuum sensor, and the product environment data generated by the vacuum sensor comprises at least one measurement of a vacuum level to which the product has been exposed.

57. A method as claimed in claim 29, wherein the sensor comprises a light sensor, and the product environment data generated by the light sensor comprises at least one measurement of an amount of light to which the product has been exposed.

58. A method as claimed in claim 29, wherein the sensor comprises a chemical sensor, and the product environment data generated by the chemical sensor comprises at least one measurement of an amount of a known chemical to which the product has been exposed.

59. A method as claimed in claim 29, wherein the sensor comprises an air sensor, and the product environment data generated by the air sensor comprises at least one measurement of an amount of air to which the product has been exposed.

60. A method as claimed in claim 29, wherein the sensor comprises a vibration sensor, and the product environment data generated by the vibration sensor comprises at least one measurement of an amount of vibration to which the product has been exposed.

61. A method as claimed in claim 29, wherein the sensor comprises a shock sensor, and the product environment data generated by the shock sensor comprises at least one measurement of an amount of shock to which the product has been exposed.

62. A method as claimed in claim 29, wherein the sensor comprises a humidity sensor, and the product environment data generated by the humidity sensor comprises at least one measurement of an amount of humidity to which the product has been exposed.

63. A method as claimed in claim 29, wherein the sensor comprises a moisture sensor, and the product environment data generated by the moisture sensor comprises at least one measurement of an amount of moisture to which the product has been exposed.

64. A method as claimed in claim 29, further comprising:

- determining whether the environmental condition of the contained product has transcended a first limit based on the product environment data,
- determining whether the environmental condition of the contained product has transcended a second limit based on the product environment data,
 - the transporting step being performed based on the determining steps.

65. A method as claimed in claim 64, wherein the container and product are transported using a faster level of service than is currently being used to transport the container and product, if the determining establishes that the environmental condition has transcended the first limit, but not the second limit.

66. A method as claimed in claim 64, wherein the container and product are routed to an alternate destination if the determining establishes that the environmental condition has transcended both the first limit and the second limit.

67. A method comprising:

receiving identification data associated with at least one of a container and product at a computer system via a network from a remote scanner;

receiving product environment data at the computer system via the network from the remote scanner, said product environment data obtained by scanning an environmental sensor associated with the contained product;

storing the product environment data in association with the identification data in the computer system;

receiving tracking data associated with the contained product at the computer system via the network from the remote scanner; and

storing the tracking data in association with the identification data and the product environment data in the computer system.

68. A method as claimed in claim 67, wherein the tracking data comprises time and location data identifying, respectively, when and where the scanning took place.

69. A method as claimed in claim 68, wherein the tracking identifier is identified in a printed medium attached to the package.

70. A method as claimed in claim 69, wherein the printed medium comprises a shipping label.

71. A method as claimed in claim 68, wherein the tracking identifier is identified by a shipping label attached to a container enclosing the product.

72. A method as claimed in claim 68, wherein the tracking identifier is stored in the sensor and read by a scanner to identify the contained product.

73. A method as claimed in claim 67, further comprising the steps of:
receiving a request to access product environment data from a remote computing device via the network; and
transmitting the product environment data in association with the tracking data.

74. A method as claimed in claim 73, wherein the computing system receives user identification data in the request received from the remote computing device, the method further comprising the step of:

determining whether the user is authorized to access the product environment data based on the user identification data; and

selectively transmitting the product environment data to the user, if the determining establishes that the user is authorized to access the product environment data.

- .75. A computer-readable medium storing a computer program that can be executed by a computer to receive product environment data, said product environment data obtained by scanning an environmental sensor associated with a product in a container, and to generate a transporting instruction for transporting the container and product based on the product environment data.
76. A computer-readable medium as claimed in claim 75, wherein the transporting instruction is generated based on determining whether the environmental condition of the product in the container has transcended a limit based on the product environment data.
77. A computer-readable medium as claimed in claim 76, wherein the container has a shipping label having shipping address data indicating a shipping address of a receiver to which the container and product are to be sent, the transporting instruction indicating the transporting be performed by a carrier so as to transport the container and product to the receiver based on the shipping address data so long as the determining step has not established that the environmental condition has transcended the limit, and the transporting instruction indicating the transporting be performed differently if the environmental condition has transcended the limit.
78. A computer-readable medium as claimed in claim 76, wherein the computer program can further be executed to transmit the transporting instruction to at least one point within a carrier's logistics network for performance of transporting the container and product.
79. A computer-readable medium as claimed in claim 76, wherein the computer program can further be executed to receive identification data associated with at least one of the container and product, and store the identification data in association with the product environment data.
80. A computer-readable medium as claimed in claim 76, wherein the computer program can further be executed to receive tracking data, and store the tracking data in association with the product environment data.

81. A computer-readable medium as claimed in claim 80, wherein the tracking data comprises time and location data identifying, respectively, when and where the scanning was performed.

82. A computer-readable medium as claimed in claim 76, wherein the container is a package.

83. A computer-readable medium as claimed in claim 76, wherein the container is a shipping container.

84. A computer-readable medium as claimed in claim 76, wherein the sensor comprises a radio-frequency identification (RFID) sensor tag, and a scanner transmits and receives radio frequency signals from the tag in the performance of the scanning step.

85. A computer-readable medium as claimed in claim 76, wherein the environmental condition sensed by the sensor to generate the product environment data includes at least one of temperature, pressure, vacuum, vibration, shock, humidity, moisture, light, air, and a chemical.

86. A computer-readable medium storing a computer program that can be executed by a computer to: receive product environment data at the computer via a network from a remote scanner, said product environment data obtained by scanning an environmental sensor associated with a contained product; store the product environment data in the computer; receive tracking data associated with the contained product at the computer via the network from the remote scanner; and store the tracking data in association with the product environment data in the computer.

87. A computer-readable medium as claimed in claim 86, wherein said tracking data comprises time and location data identifying when and where, respectively, the scanning took place.

88. A computer-readable medium as claimed in claim 86, wherein the computer program can further be executed to receive a request to access the product environment data from a remote

computing device via the network, and transmit the product environment data in association with the tracking data.

89. A computer-readable medium as claimed in claim 86, wherein the computer program can further be executed to: receive user identification data in the request received from the remote computing device; determine whether the user is authorized to access the product environment data based on the user identification data; and selectively transmit the product environment data to the user, if the determining step establishes that the user is authorized to access the product environment data.